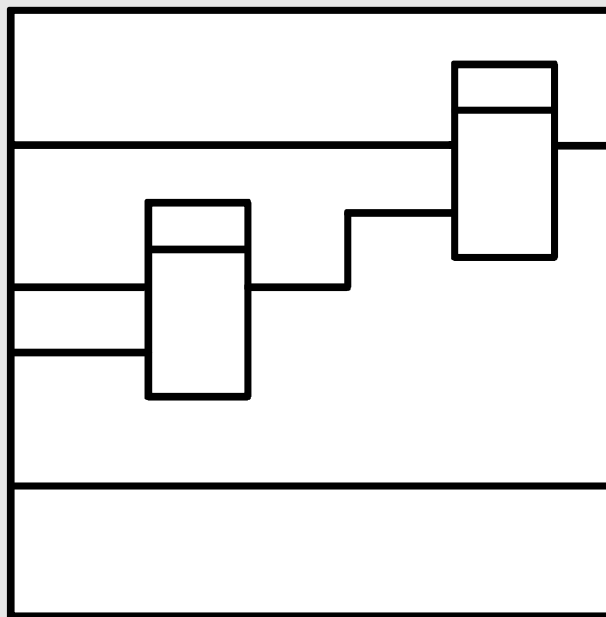


# SIEMENS

## SIMADYN D Digital Control System

User Manual

### Interface board SB30



Edition		Edition status
1	Interface board SB30	11.93
2	Interface board SB30	09.94
3	Interface board SB30	05.95
4	Interface board SB30	04.97
5	Interface board SB30	11.98

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We have checked the contents of this Manual to ensure that they coincide with the described hardware and software. However, deviations cannot be completely ruled-out, so we cannot guarantee complete conformance. However, the information in this document is regularly checked and the necessary corrections included in subsequent editions. We are thankful for any recommendations or suggestions.

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**Contents**

Warning information..... 1

1. Ordering information ..... 3

2. Function description..... 3

3. Board design..... 3

4. Application information..... 3

5. Technical data..... 4

    5.1. General data..... 4

    5.2. Electrical data ..... 4

6. Connector assignment..... 4

    6.1. Assignment, flat connector X7..... 4

    6.2. Assignment, flat connector X1..... 5

    6.3. Assignment, screw connector X2..... 5

7. Attachments..... 6

    7.1. Block diagram..... 6

    7.2. Dimension drawing ..... 6

8. ECB instructions..... 7



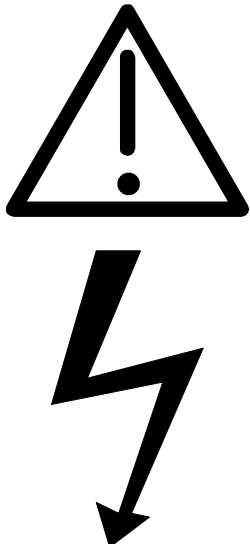
**NOTE !**

The information in this Manual does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, please contact your local Siemens office.

Further, the contents of this Manual shall not become a part of or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties nor modify the existing warranty.

**Warning information**

	<div><b>WARNING !</b></div> <p>Electrical equipment has components which are at dangerous voltage levels.</p> <p>If these instructions are not strictly adhered to, severe bodily injury and material damage can result.</p> <p>Only appropriately qualified personnel may work on this equipment or in its vicinity.</p> <p>This personnel must be completely knowledgeable about all the warnings and service measures according to this User Manual.</p> <p>The successful and safe operation of this equipment is dependent on proper handling, installation, operation and maintenance.</p>
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## Definitions

### \* **QUALIFIED PERSONNEL**

For the purpose of this User Manual and product labels, a "Qualified person" is someone who is familiar with the installation, mounting, start-up and operation of the equipment and the hazards involved. He or she must have the following qualifications:

1. Trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
2. Trained in the proper care and use of protective equipment in accordance with established safety procedures.
3. Trained in rendering first aid.

### \* **DANGER**

For the purpose of this User Manual and product labels, "Danger" indicates death, severe personal injury and/or substantial property damage will result if proper precautions are not taken.

### \* **WARNING**


For the purpose of this User Manual and product labels, "Warning" indicates death, severe personal injury or property damage can result if proper precautions are not taken.


### \* **CAUTION**

For the purpose of this User Manual and product labels, "Caution" indicates that minor personal injury or material damage can result if proper precautions are not taken.

### \* **NOTE**

For the purpose of this User Manual, "Note" indicates information about the product or the respective part of the User Manual which is essential to highlight.

	<div><b>CAUTION!</b></div> <div>This board contains components which can be destroyed by electrostatic discharge. Prior to touching any electronics board, your body must be electrically discharged. This can be simply done by touching a conductive, grounded object immediately beforehand (e.g. bare metal cabinet components, socket protective conductor contact).</div>
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	<div><b>WARNING!</b></div> <div>Hazardous voltages are present in this electrical equipment during operation.</div> <div>Non-observance of the safety instructions can result in severe personal injury or property damage.</div> <div>It is especially important that the warning information in all of the relevant Operating Instructions are strictly observed.</div>
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## 1. Ordering information

SB30: 6DD 1681- 0DD1

## 2. Function description

The SB30 interface board is used in the SIMADYN D system as output without electrical isolation for binary signals on the system side with a 24V signal level. The interface board has two 10-pin flat connectors for connecting the output signals from two redundant SIMADYN D systems A and B. Using a control input, the output signals of systems A or B can be optionally connected-through to the interface board output. The SB31 interface board can be used as changeover switch.

## 3. Board design

- 8-pin changeover board can be snapped onto a mounting rail
- 2 ribbon cable connectors 2\*5-pin X1 and X7 for binary signals from SIMADYN D
- 16 terminal connections (X2) for process signals
- 2 terminal connections (X2) for connecting the control supply voltage
- 2 terminal connections (X2) for connecting the control voltage
- 4 terminal connections for connecting the supply voltage of binary outputs

## 4. Application information

24V process signals up to 50mA are permissible.

The SB31 interface board can be used to changeover the interface board.

The interface board can be used with the SIMADYN D-specific system boards according to the following overview:

Boards	Cable type
PM12 X5 PM13 X5 PM16 X5 EB11 X5 EM11 X7 EM13 X7	SC13
PG11 X6 PG16 X6 PS16 X6	SC7

## 5. Technical data

### 5.1. General data

INSULATION GROUP	acc. to VDE 0160/Draft, came into force 12/90, 60V DC rated insulation voltage
AMBIENT TEMPERATURE	0 to 55 °C
STORAGE TEMPERATURE	-40 to 70 °C
HUMIDITY CLASS acc. to DIN 40040	F
DEGREE OF PROTECTION acc. to DIN 40050	IP00
MECHANICAL STRESSING	acc. to SN 29010, Class 12
MOUNTING SYSTEM	Can be snapped onto mounting rails
DIMENSIONS	118mm*135mm*42mm
WEIGHT	approx. 310g

### 5.2. Electrical data

PERMISSIBLE PROCESS SIGNAL VOLTAGE	+24V, max. 50mA
SWITCHING THRESHOLD AT THE CONTROL INPUT	4.5V
CONTROL INPUT CURRENT	2mA at 24V
CONTROL VOLTAGE SUPPLY	24V, 5mA (control input < 4.5V) ,33mA (control input > 4.5V)

## 6. Connector assignment

### 6.1. Assignment, flat connector X7

Pin at X7	Function
1	Signal 1, system A
2	Signal 2, system A
3	Signal 3, system A
4	Signal 4, system A
5	Signal 5, system A
6	Signal 6, system A
7	Signal 7, system A
8	Signal 8, system A
9	1P, 24V
10	1M, 0V



## 6.2. Assignment, flat connector X1

Pin at X1	Function
1	Signal 1, system B
2	Signal 2, system B
3	Signal 3, system B
4	Signal 4, system B
5	Signal 5, system B
6	Signal 6, system B
7	Signal 7, system B
8	Signal 8, system B
9	2P, 24V
10	2M, 0V

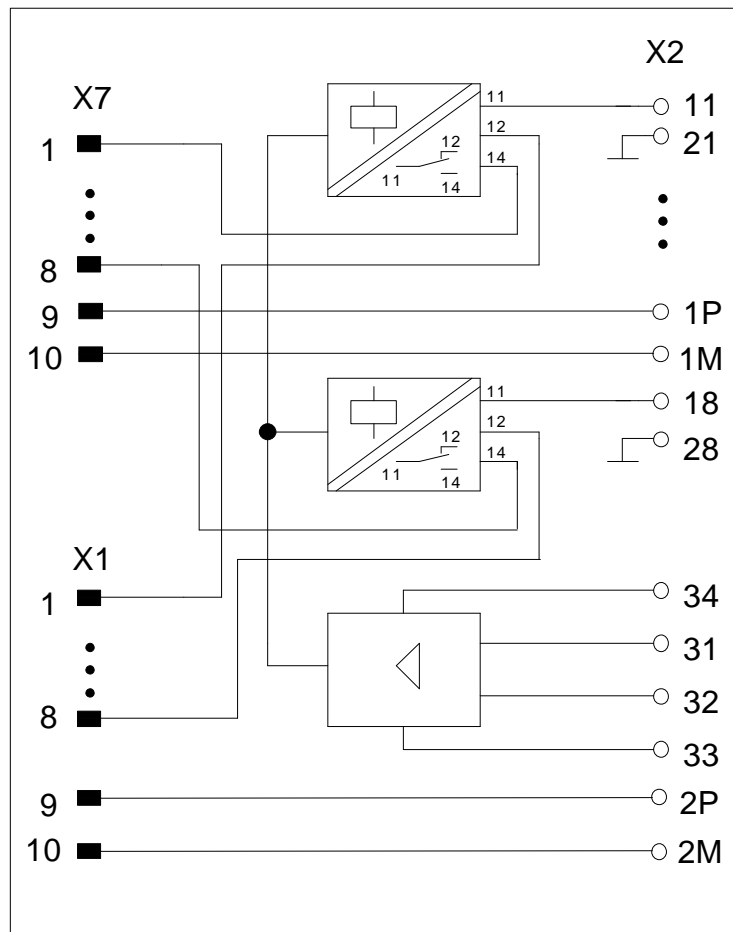
## 6.3. Assignment, screw connector X2

**Caution:** The assignment of terminals 31 to 34 deviates from the terminal assignment of the earlier SE33 board.

Terminal at X2	Function
11	Signal 1
21	0V for signal 1
12	Signal 2
22	0V for signal 2
13	Signal 3
23	0V for signal 3
14	Signal 4
24	0V for signal 4
15	Signal 5
25	0V for signal 5
16	Signal 6
26	0V for signal 6
17	Signal 7
27	0V for signal 7
18	Signal 8
28	0V for signal 8
31	Control input
32	Control input 0V (same potential as terminal 33)
33	Feeds-in control voltage M24S
34	Feeds-in control voltage P24S
1P	Voltage supply system A, 24V
1M	Voltage supply system A, 0V
2P	Voltage supply system B, 24V
2M	Voltage supply system B, 0V

## 7. Attachments

### 7.1. Block diagram



### 7.2. Dimension drawing

Dimension drawing

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## 8. ECB instructions

Components which can be destroyed by electrostatic discharge (ECB)

Generally, electronic boards should only be touched when absolutely necessary.

The human body must be electrically discharged before touching an electronic board. This can be simply done by touching a conductive, grounded object directly beforehand (e.g. bare metal cubicle components, socket outlet protective conductor contact).

Boards must not come into contact with highly-insulating materials - e.g. plastic foils, insulated desktops, articles of clothing manufactured from man-made fibers.

Boards must only be placed on conductive surfaces.

When soldering, the soldering iron tip must be grounded.

Boards and components should only be stored and transported in conductive packaging (e.g. metalized plastic boxes, metal containers).

If the packing material is not conductive, the boards must be wrapped with a conductive packing material, e.g. conductive foam rubber or household aluminum foil.

The necessary ECB protective measures are clearly shown in the following diagram.

a = Conductive floor surface  
b = ECB table  
c = ECB shoes

d = ECB overall  
e = ECB chain  
f = Cubicle ground connection

